

The 3Rs Collaborative's 2025 Impact Report

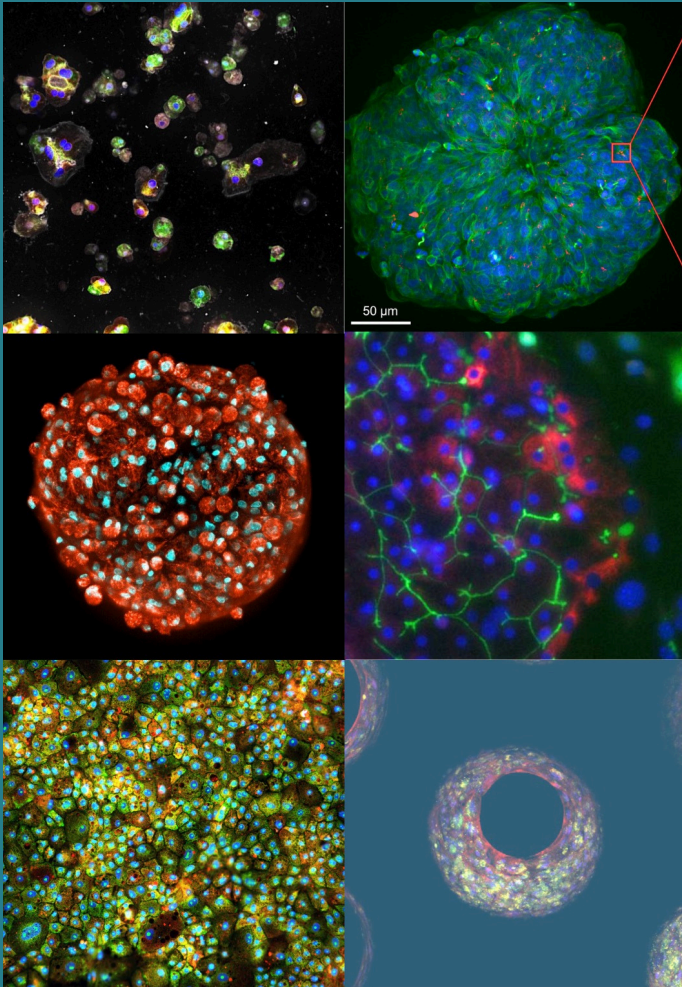


Photo credit to University of Washington



Better science -
for both people & animals

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Shaping the Future: Science, Ethics, & the 3Rs In Action

Heigh ho. To work we went, guided by Refine, Reduce, and Replace.

The past year brought a moment that called for action, and the 3Rs Collaborative stepped up. As conversations around ethics, innovation, and responsible research accelerated, we did not wait on the sidelines. As a nonprofit organization dedicated to advancing the 3Rs, we stayed engaged, moved quickly, and leaned into opportunities as they emerged, meeting change with enthusiasm and purpose. Standing still was not an option. Throughout 2025, the visibility and urgency of the 3Rs increased rapidly, driven by scientific advances, evolving regulatory expectations, and growing global attention. The Collaborative stayed active and outward facing, convening conversations, sharing expertise, and contributing in real time as the field shifted. When engagement was needed, we showed up.

Launched in January 2025, the 3Rs Certificate Course quickly gained momentum over the course of the year. Enrollment grew steadily, participation was strong, and feedback underscored the value of practical education that equips people to apply the 3Rs where decisions are actually made. The course became a focal point for energy and connection, strengthening skills, confidence, and community across the research enterprise.

We also moved decisively into experimental work on the FDA iSTAND Drug Induced Liver Injury project, advancing New Approach Methodologies in a complex and regulatory relevant space. This was not theoretical work. It was hands-on, forward-looking science that demonstrated how the 3Rs can actively shape the future of safety assessment and regulatory confidence.

At the same time, we expanded our commitment to the people behind the science through the Culture of Care Resource Hub. The Hub responded to a clear need for practical, accessible resources that support teams, reinforce ethical practice, and sustain care in demanding environments. Its uptake reflected a community ready for tools that recognize both scientific excellence and human impact.

The energy of the 3Rs Collaborative extended well beyond our programs. Our Executive Director, Megan LaFollette, was invited to deliver keynote presentations at international meetings, and members of the Collaborative actively shared and amplified our work across regions and disciplines. Together, this collective presence reinforced that the 3Rs Collaborative is engaged, credible, and contributing meaningfully to a global conversation that is moving fast.

None of this progress would be possible without the dedication of our staff and volunteers, along with our collaborators and partners. Their readiness to step in, step up, and keep moving made it possible to respond to opportunity with confidence and speed.

There is still work ahead, and we are ready for it. Guided by Refine, Reduce, and Replace, we will continue to show up, stay engaged, and move forward together. Heigh ho, onward we go.

With appreciation,
Sally Thompson-Iritani, DVM, PhD
President, 3Rs Collaborative
University of Washington

Introduction



Advancing better science – for both people and animals.

We facilitate collaborative 3Rs opportunities to make a positive impact using evidence-based science for people and animals in research and teaching.

We work to:

- Refine: Improve the lives of animals used in research and teaching
- Reduce: Minimize animal numbers while maximizing scientific output
- Replace: Promote the widespread adoption of non-animal models

Our work is grounded in the real world, practical experiences to initiate the most progress in the shortest amount of time.

Introduction

OUR VISION

Uniting scientific excellence and animal welfare.

We strive to create a future where:

- All research animals consistently receive the best care possible throughout their lifespan to maximize their welfare—regardless of size or species.
- All animal experiments and science-related breeding programs are designed to maximize quality, including reproducibility and translation, while minimizing the numbers of animals required across the research pipeline.
- All scientifically valid replacement technologies are consistently implemented whenever appropriate throughout the scientific and teaching pipeline so that animals are only used when absolutely necessary.
- All individuals working in animal research and teaching feel supported to do their best work for their research animals and scientific progress.

Ultimately, science, knowledge, and respect for all beings are advanced.



OUR VALUES

1. **Evidence:** We make decisions based on high-quality, data-driven, evidence-based science.
2. **Collaboration:** We work across disciplines and incorporate information from different backgrounds. The output of the group is greater than that of one.
3. **Impact:** We make an impact through the 3Rs on scientific research. We are outcome driven, constructive, and practical.

3RsC Leadership & Staff - 2025

Executive Team



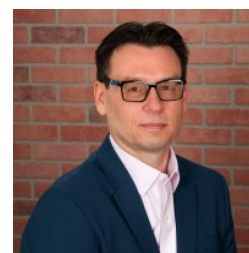
Past President

Elizabeth Nunamaker
Charles River
Laboratories



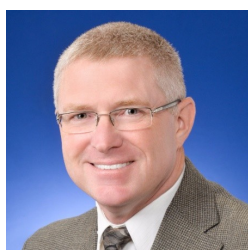
President

Sally Thompson-Iritani
University of Washington



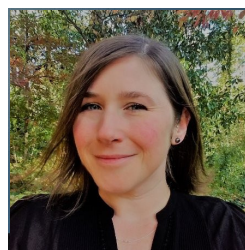
Vice President

Szczepan Baran
Baran Cafe



Treasurer

Jerry Poling
Lilly



Secretary

Melissa Truelove
CDC

Board Members

Alan Hoberman, Charles River Laboratories
Clive Roper, Roper Toxicology Consulting
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Noel Dybdal, Genentech
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Susan Bolin, AbbVie

Ad Hoc Board Members

Jessie Carder, AWIC-USDA
Naomi Charalambakis, AMP

Natalie Bratcher, Murine
Nicolette Petervary, OLAW-NIH
Vicky Robinson, NC3Rs

Staff

Executive Director: Megan LaFollette

Program Manager: Lauren Young through July; Aleeza Stephens starting in August

3RsC By The Numbers

Thanks to the vital support of our members, the 3Rs Collaborative has made important gains in advancing better science – for both people and animals. We are ensuring that research animals receive the best care, with the best designed experiments, and replaced when scientifically feasible.



Founded in
2017



8
Core Initiative
Topics



>285
Volunteers



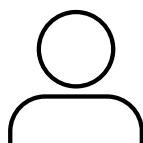
73
Resource Pages
(6 new!)



45
Organizational
Members/Donors



79
Initiative
Members/Donors



46
Individual
Members/Donors



>11,000
Animals
Replaced



13
Conferences



>50
Presentations

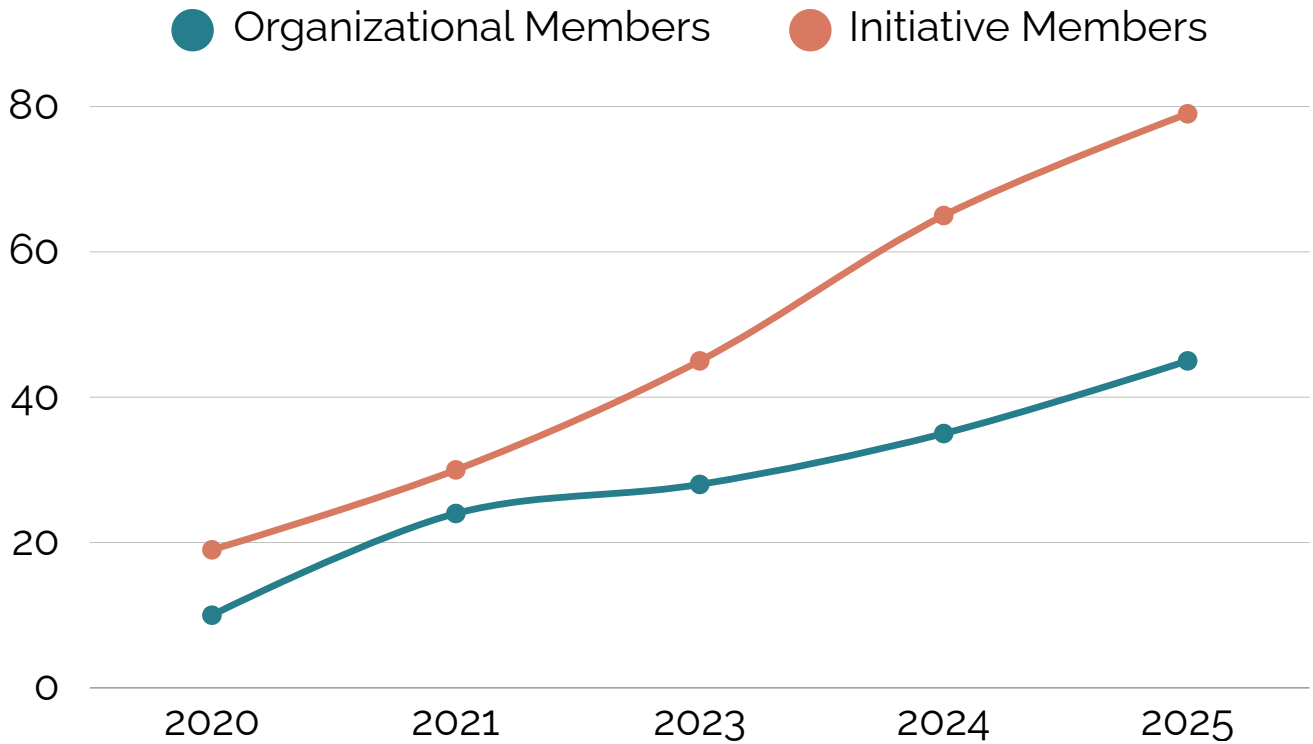


2
Public Responses

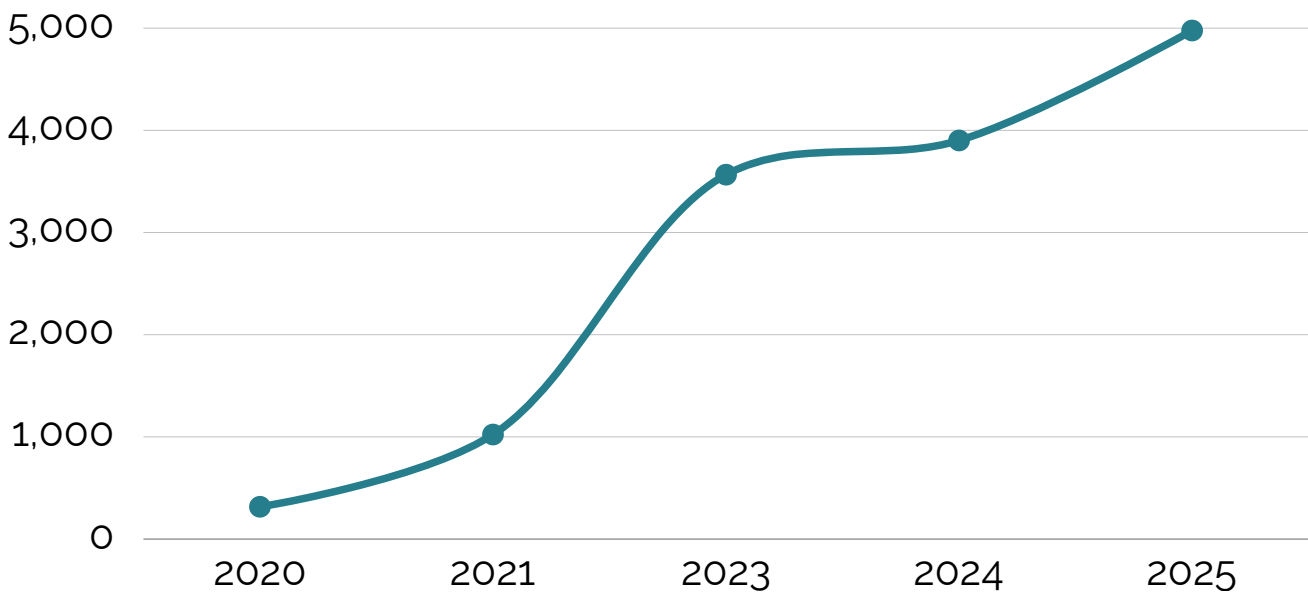


3RsC Growth Over Time

3RsC Member Growth



LinkedIn Followers



Broadening 3Rs Support

The 3RsC's first strategic goal is to broaden 3Rs support.

We are creating a research landscape that is knowledgeable and supportive of the 3Rs. Our strategy is to promote broad knowledge of the 3Rs while supporting workplace wellness and culture of care. One example of our success? 50 respondents said the 3Rs Collaborative helped boost professional wellbeing within their organizations.



Advancing broad knowledge of the 3Rs across stakeholders

The 3RsC has created a 3Rs certificate course for broad stakeholder use, from students to technicians to researchers. In 2025, we officially launched the 3Rs Certificate in January, marketed it broadly, and collected initial feedback. Mid-year we negotiated special 3RsC member pricing to make the course more accessible. In 2025, 21 organizations and 55 individuals purchased the course, with a total of 539 learners completing the course.

Why a Certification Course?

Although most animal research professionals have learned about the 3Rs briefly, they may lack in depth information on their application. Furthermore, there is no singular, comprehensive, or standardized training. A virtual, self-paced certification course will increase general knowledge, support, and practical implementation for the 3Rs across diverse stakeholders.

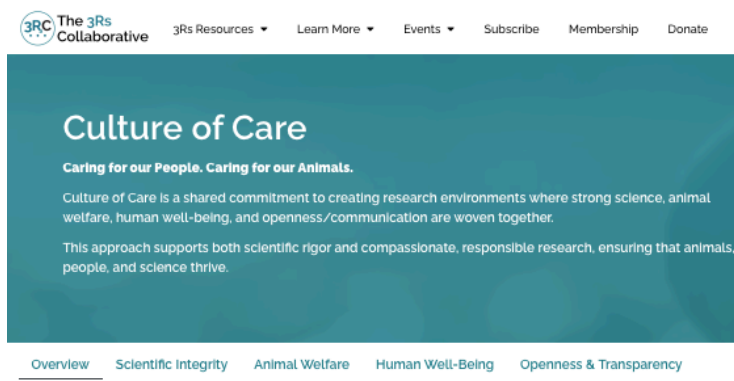
Next Steps

In 2026, we will review feedback from initial course takers and determine next steps for revision.

Broadening 3Rs Support

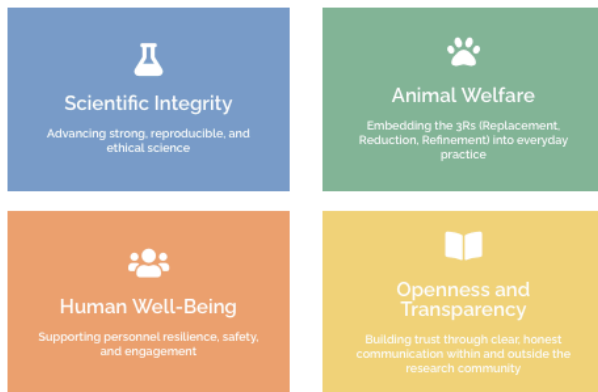
Supporting workplace wellness & culture of care

Ultimately, the implementation of the 3Rs is dependent on those working in science. Although this work can be deeply meaningful, it often comes with real challenges including typical workplace concerns such as poor work-life balance and difficult relationships with peers, as well as field-specific concerns such as social stigma and seeing research animals in distress when necessary for research goals.



Since 2020, the 3Rs Collaborative has been promoting workplace wellness and a culture of care in scientific institutions. We've created 6 individual and 9 institutional resources and worked with 6 specific institutions to advance their institutional compassion fatigue resiliency programs

The Four Pillars of Culture of Care

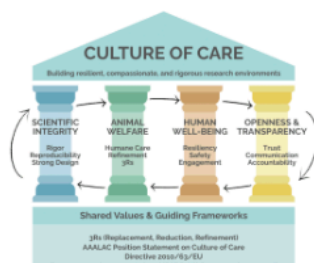


How the Four Pillars Work Together

The Culture of Care is only strong when its four pillars — Scientific Integrity, Animal Welfare, Human Well-Being, and Openness & Transparency — are aligned and reinforcing one another.

Each pillar is essential on its own, but it is the interdependence between them that creates a truly resilient, compassionate, and effective research environment.

When these pillars are connected, they form a foundation that supports both excellent science and responsible stewardship.



In 2025 we:

- Analyzed longitudinal data from our 3-year survey, drafted and submitted the manuscript
- Transitioned the initiative to focus on Culture of Care and launched a Culture of Care hub on our website
- Contributed to 15 presentations at 14 different conferences or institutions across the United States, Canada and the EU, including a panel on Culture of Care at AALAS

In 2026, we will continue providing resources to help institutions implement a culture of care.

Broadening 3Rs Support

Fostering continuing education on the 3Rs

Knowledge around evidence-based, high-impact 3Rs techniques is always expanding. Therefore, the ongoing continuing education of professionals is critical to ensure good understanding of 3Rs techniques, strategies, and resources. This training promotes good animal welfare, experimental practices, and translation of research findings.

As part of its training efforts, in 2025 the 3Rs Collaborative:

- Organized a 3Rs Sharing Conference with the New Jersey Association for Biomedical Research, facilitating learning and discussion about the 3Rs across stakeholders. This conference featured 10 talks and 75 attendees. It's unique for being a single-track conference across the 3Rs
- Disseminated >75 newsletters and >80 social media posts to help enable greater support of the 3Rs
- Contributed to over 50 presentations at 13 conferences that reached a variety of stakeholders
- Hosted 73 practical enabling 3Rs resources on our website including 6 brand new information pages!



Advancing Critical 3Rs Techniques

The 3RsC's second strategic goal is to advance critical 3Rs techniques.

The 3RsC devotes significant time and energy to advancing critical 3Rs techniques that are evidence-based, practical, and high-impact. After choosing the right topics and leaders, we work to thoroughly understand the status quo before creating strategic resources to accelerate widespread implementation. Our efforts are grounded in human and organizational behavior change theories.

Refined Mouse Handling to Improve Welfare

Mice - the most common research mammal - experience stress when picked up by the tail, but research shows that picking them up with refined methods can significantly reduce animal anxiety and improve research outcomes.

In 2025 we:

- Finished data extraction & bias assessment for a systematic review on refined mouse handling including articles from an updated search
- Expanded species-specific refinement resources to include procedure refinements for rodents, pigs, and rabbits
- Expanded our refined handling hub to include information on hut handling in addition to tunnel and cupping
- Conducted 1 hands on workshop & 10 presentations, including an AALAS session on refined/low-stress handling of multiple species



Photo credit to University of Washington

Looking ahead, in 2026 we will focus on finishing & disseminating results from our systematic literature review, strengthening our mentorship program, and continuing our workshops & presentation efforts.

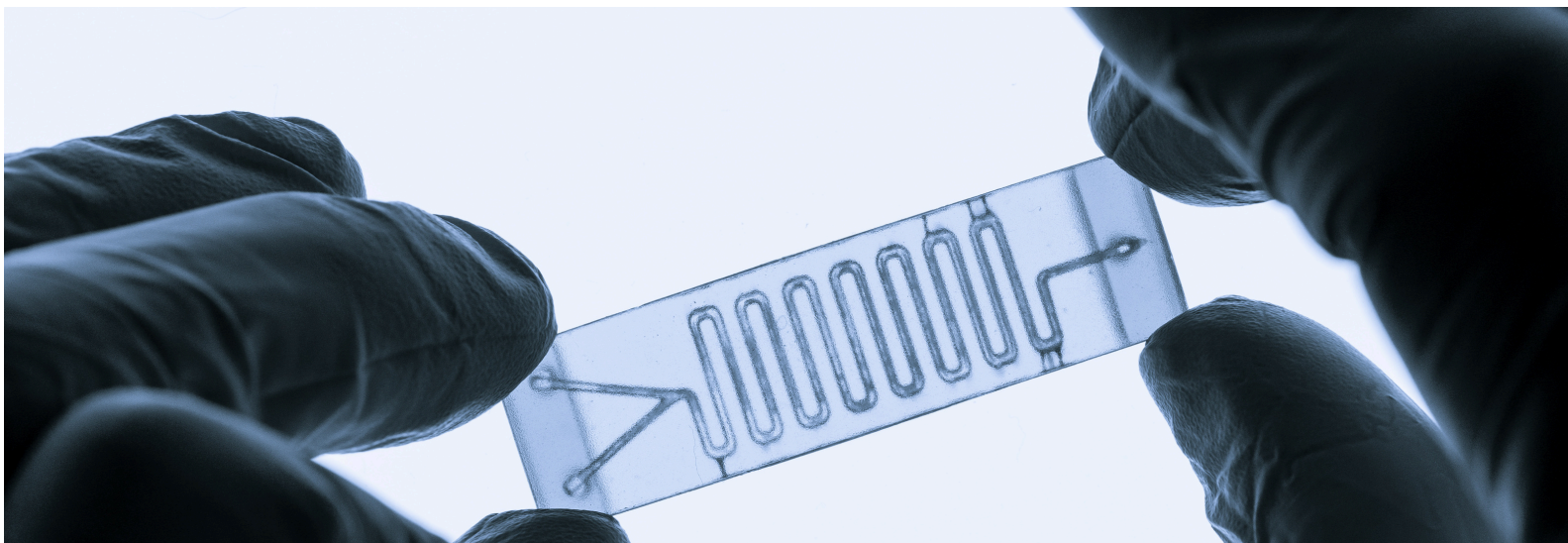
Advancing Critical 3Rs Techniques

Advancing the use of Microphysiological Systems (MPS)

MPS are an impactful technology that allows researchers to study biological processes by creating miniature versions of whole organs (usually, but not always, incorporating human cells). We work with an initiative of 48 commercial providers, 5 consultants, and 6 additional stakeholders to advance the implementation and regulatory use of MPS.

In 2025 we:

- For our cross-platform liver MPS project with the FDA-CDER, NIH, C-Path, and End Users. We:
 - Submitted a letter of intent to the FDA's Innovative Science and Technology Approaches for New Drugs (ISTAND) Program to qualify liver MPS for a specific drug-induced-liver injury application.
 - Facilitated the signing of legal agreements and data collection by 9 commercial providers
 - Fully drafted a paper outlining the process for submission in early 2026
- Organized 6 presentations from the 3RsC including to SACATM, ICCVAM, C-Path, HESI, and the IQ-MPS
- Organized 4 workshops from our members on the topics of AI/ML in MPS and retina and ocular MPS, multi-organ MPS, the ISTAND program, and the use of MPS for supporting regulatory applications for new drugs. These workshops each had >145 registrants and >500 recording views. [View here](#).
- Published 4 ALTEX Corners on behalf of the 3RsC-MPS initiative
- Welcomed 11 new members to our initiative expanding our [MPS Tech Hub](#)
- Published an update on [facts about the FDA Modernization Acts & MPS](#)
- Had our publication titled "[The Use of MPS in Three Rs and Regulatory Applications: Perspectives From Developers on Stakeholder Responsibilities](#)" accepted



Advancing Critical 3Rs Techniques

Replacing Sentinel Mice with Environmental Health Monitoring (EHM)

Advancements in PCR technology now make it possible to completely replace the use of soiled bedding sentinel mice to monitor colony mouse health. However, more work is needed to share this message and help institutions transition their programs.

In 2025 we:

- Continued to support a mentorship program that engaged 11 mentees that want to help their institution switch to EHM.
- Fully reviewed and edited the resource hub, including updates to FAQs
- Published pathogen exclusion consensus paper
- Disseminated the results from our systematic review of environmental health monitoring via 7 presentations across the world.



Advancing Critical 3Rs Techniques

Advancing Science & Welfare with Translational Digital Biomarkers

With the advent of 24/7 monitoring systems for animal behavior and physiology, it is now easier than ever to develop digital biomarkers that are translational. However, despite the enormous potential for this technology to advance better science, more is needed to be done to advance its implementation and regulatory use. Our translational digital biomarkers initiative brings end-users and technology providers together in a pre-competitive space to work together for mutual benefit.

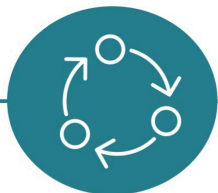
In 2025 we:

- Had the publication titled “Validation framework for in vivo digital measures” formally accepted in January of 2025
- Fully drafted and disseminated a survey focused on return on investment for TDB
- Expanded our TDB technology hub to include 8 commercial providers
- Organized 4 presentations to advance the use of these important technologies (FELESA, UFAW, AALAS, SFN)

Why should we use translational digital biomarkers in drug discovery & development?



Animal Welfare



Operational



Scientific



Strategic

[Below you can see a screenshot of our newly launched TDB technology hub](#)

Below you can explore Translational Digital Biomarker technologies that are currently available. Use the filters below to sort the technologies by **Species**, usable **Environment**, **Readouts** and potential **Scalability**. Use the outreach buttons to contact individual technology providers for the answer to questions, inquiries about products or services, and key validation and publications related to each specific TDB technology.

Translational Digital Biomarker Technologies

Species

Environment

Readouts

Scalability

None



None



None



None



Advancing Critical 3Rs Techniques

Improving Non-Human Primate Welfare through Behavioral Management

Although non-human primates make up less than 1% of research animals, they play a critical role in biomedical research and are essential to focus on improved welfare and refinement needs. There have been a number of publications and resources related to implementation, yet there still remains a gap in uptake of key refinements and thus more work to be done on this topic.

There is no other US based, research primate focused group balanced across academic, pharma, and various roles in the research setting. This initiative, established in 2023, focuses on practical, actionable, and implementable ways to improve NHP welfare through behavioral management.

In 2025, the 3RC NHP initiative continued their efforts on the development and writing of a review paper on refining NHP housing and human-animal interactions which was submitted to JAALAS in November. The initiative continues to improve our website hub for NHP refinement with the goal to publish it early 2026. This initiative is now composed of 17 individual members from 15 different institutions.



Advancing Critical 3Rs Techniques

Utilizing artificial intelligence to enhance risk assessment & safety

Artificial Intelligence technologies can increase the quality and amount of information gained from both human and animal studies and offer unique opportunities for scientific advancement. Artificial Intelligence represents an opportunity to complement and, in some cases, reduce reliance on animal models in biomedical research and preclinical drug discovery and development.

The 3RsC Artificial Intelligence Initiative is a collaboration between technology developers, end-users, regulators, academics, and other stakeholders in the AI space. It provides a venue for productive interaction between key stakeholders in the industry to advance implementation and qualification of artificial intelligence methods.

This initiative is co-led by Szczepan Baran (VeriSim Life) and Weida Tong (US-FDA) and currently includes 30 individuals from institutions such as AbbVie, Charles River Laboratories, US-EPA, HESI, Novartis, NIH/NIEHS, Pfizer, Novartis, and more.



This initiative was formally launched in November of 2023.

In 2025, we

- Hosted a webinar on using AI for everyday
- Reviewed and submitted review paper on use of AI in preclinical safety & risk assessment
- Opened initiative to 18 new members

Expanding Awareness of the 3RsC

The 3RsC's third strategic goal is to advance awareness of our organization.

The 3Rs Collaborative provides a wide range of resources to increase understanding and implementation of the 3Rs. These resources help individuals and institutions change practices for the better. Still, there are many more individuals and institutions that could benefit from our resources but are unaware of them.

Increased awareness and dissemination of our organization and resources helps accelerate the implementation of the 3Rs across the national and international scientific community.

In 2025, we fostered awareness and collaboration with key stakeholders by:

- Contributing over 50 presentations at 13 conferences or events
- Having AAALAC Membership & being active on the 3Rs SubCommittee
- Active participation on the FNIH's NAMs Validation & Qualification Network especially on the Education & Communication subgroup.
- Meeting and collaborating with over 10 critical stakeholders including: US-FDA-CDER, IQ-MPS, NC3Rs, NJABR, NIH-OLAW, NTP, NICEATM, ICCVAM, SACATM, FNIH, SLC, C-PATH, HESI, etc.
- Publishing >75 newsletters and >80 social media posts
- Gaining >750 new newsletter subscribers and >1000 new LinkedIn followers

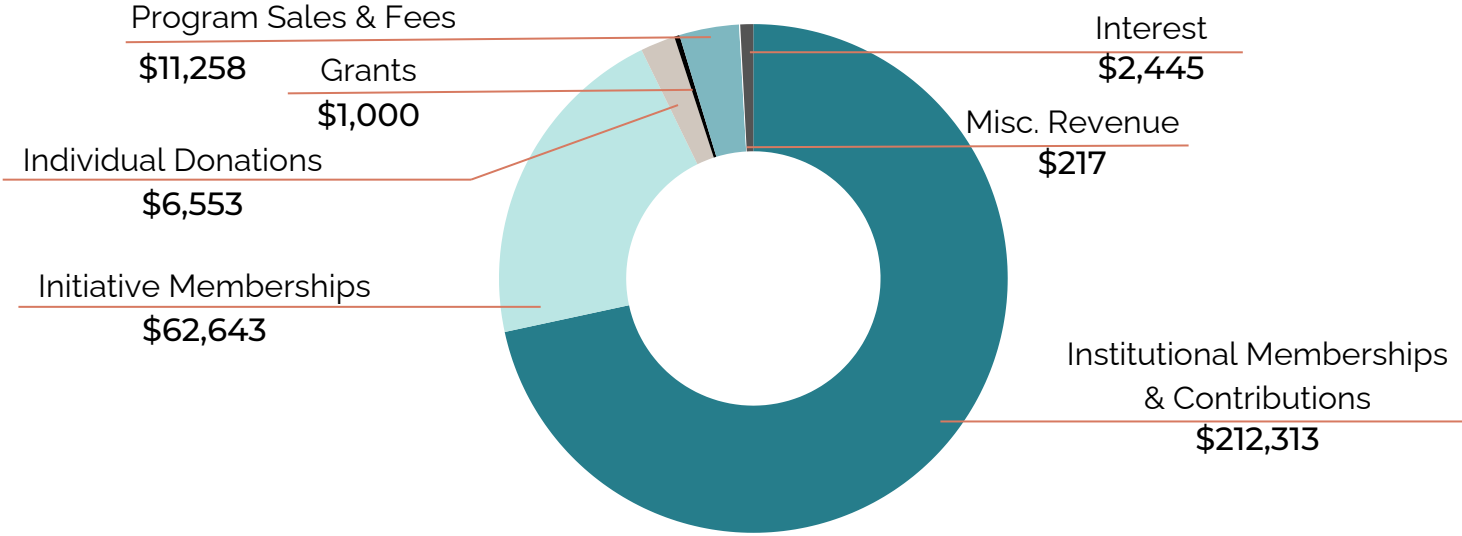


Financial Report

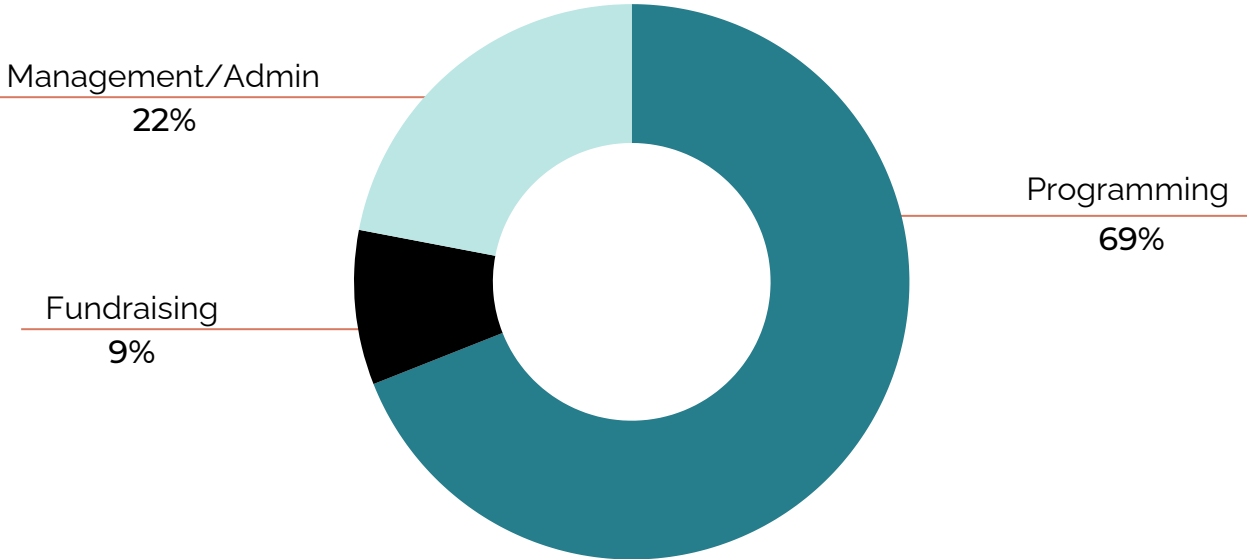
The 3Rs Collaborative's operating funds come from 5 main sources: institutional contributions, initiative contributions, individual donations, grants, and program sales & fees. Our expenses fall into 3 main expense categories: programming, fundraising, and overall administration & management. In 2025, our total revenue was \$269,919, total expenses were \$209,421, total assets was \$295,975, total liability was \$30,005, and total equity was \$87,498

In 2025, 69% of funds were spent on programming.

Financial Support



Expense Categories



Membership & Donors

The 3Rs Collaborative thanks each of our members, grantors, and donors for their commitment to our mission. At the end of this report, we've listed everyone according to their wishes. We are so grateful for your partnership in advancing better science – for both people & animals.

165 Total Members/Donors

58 New Members/Donors

84% Initiative Member Retention Rate

94% Organizational Member Retention Rate

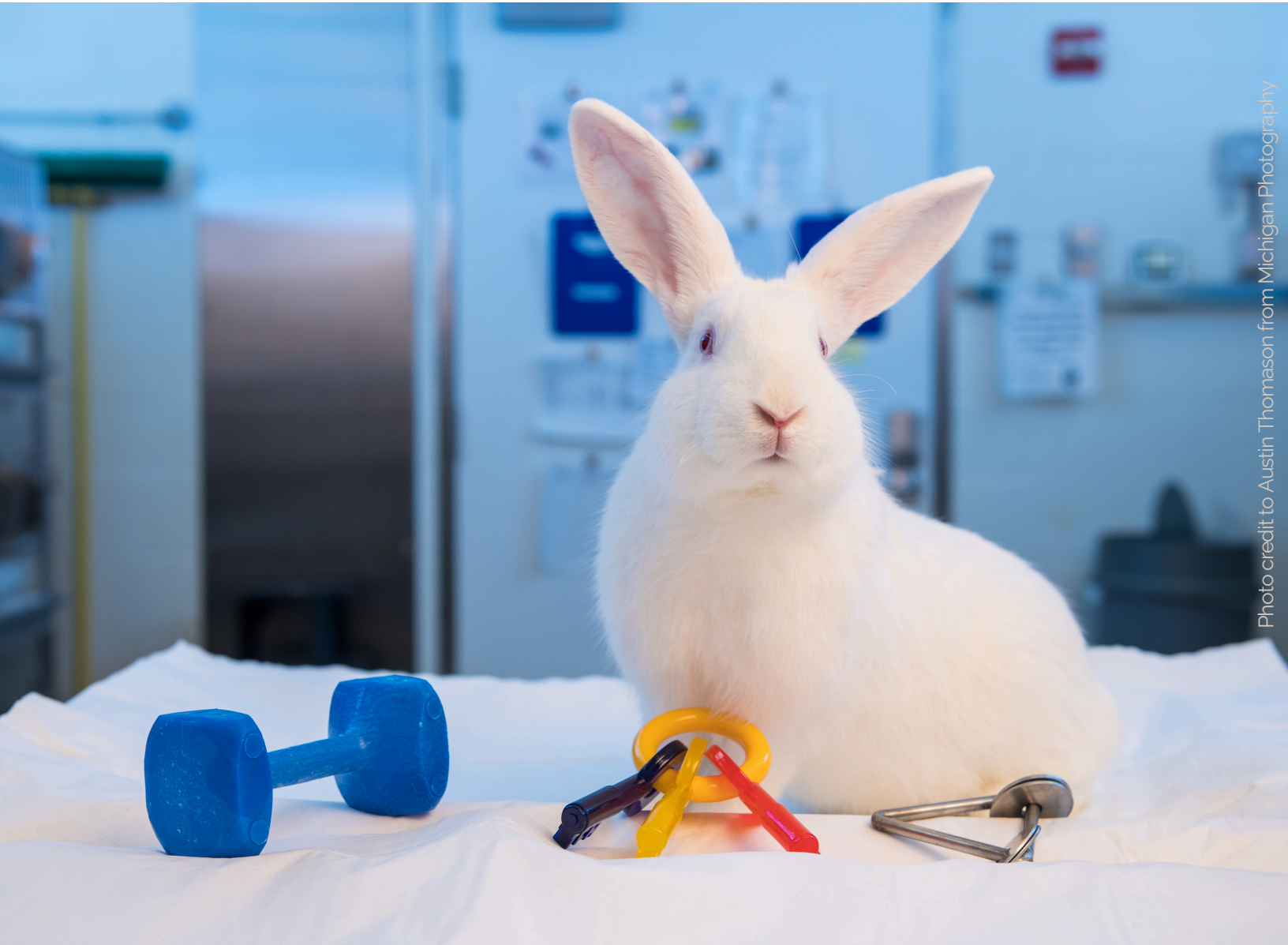


Photo credit to Austin Thomason from Michigan Photography

Impacts by The Numbers

Inputs: Activities & Resources Provided by the 3RsC

General 3Rs Training & Resources

- 73 general resources (6 new)

Symposia, Presentations, and Other Events

- Hosted 1 conference & 6 webinars
- Attended 13 conferences
- >20 presentations

Specific 3Rs Initiatives

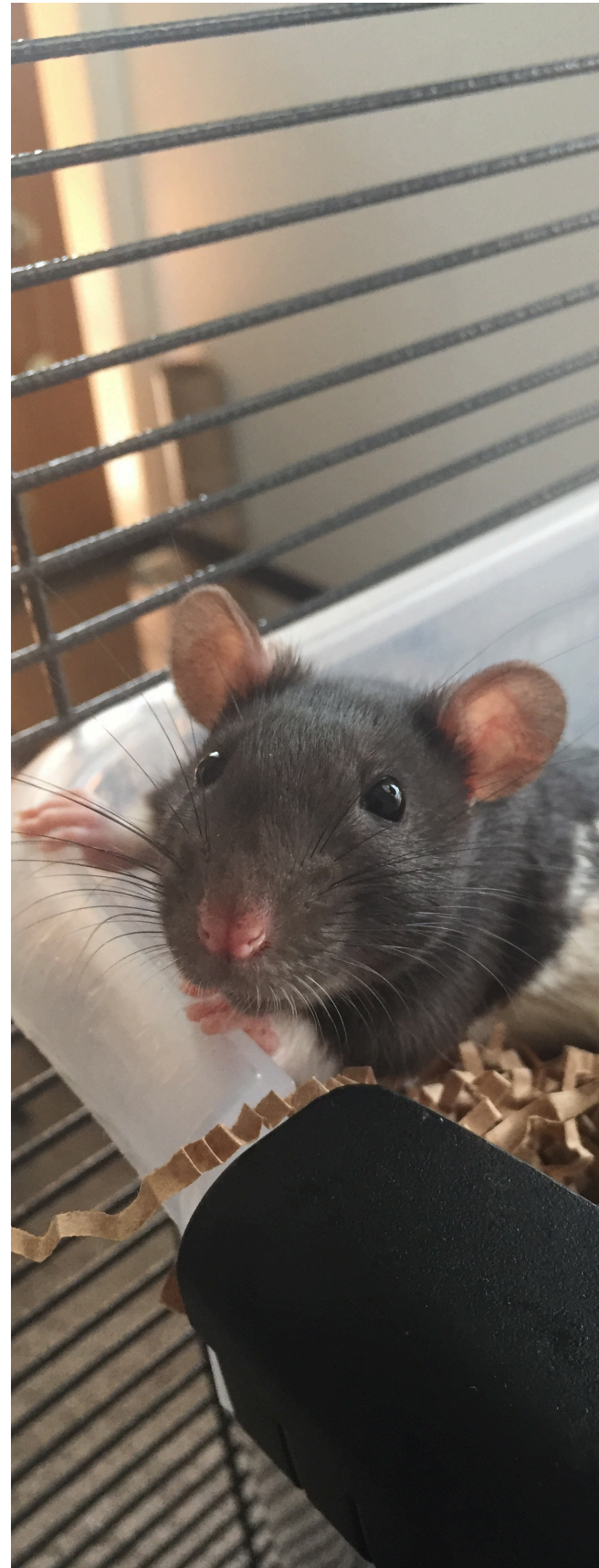
- 8 initiatives

Collaboration with Other Organizations and Individuals

- >90 collaborating organizations
- >250 collaborating individuals

Information Resources

- 70 resources (6 new)
- >75 newsletters
- 2 public responses (SACATM, ICCVAM)



Impacts by The Numbers

Outputs & Outcomes: Initial Results

Improved understanding and awareness of the 3Rs

- >2000 individuals at events
- Positive feedback

Creation of new 3Rs knowledge

- 6 new resources
- 3 new publications

Development of collaborative and mentoring networks.

- >75 collaborations as shown by exchange of information
- 2 mentorship programs
- 8 collaborative working groups

Dissemination activities

- >3500 newsletter subscribers (761 new subscribers)
- Newsletter open rate 67% & click rate 21% (ranging from 4-44%)
- >92,000 website views from >41,000 visitors
- LinkedIn: 4,977 followers, 82 posts, >90,000 Impressions, 6% engagement rate

Photo credit: to Ellegaard Gottingen Minipigs



Impacts by The Numbers

Interim Impacts: Changes in perception, policy, and practice

Increased 3Rs audience and knowledge

- >90 organizations working with 3RsC

Uptake of key 3Rs techniques

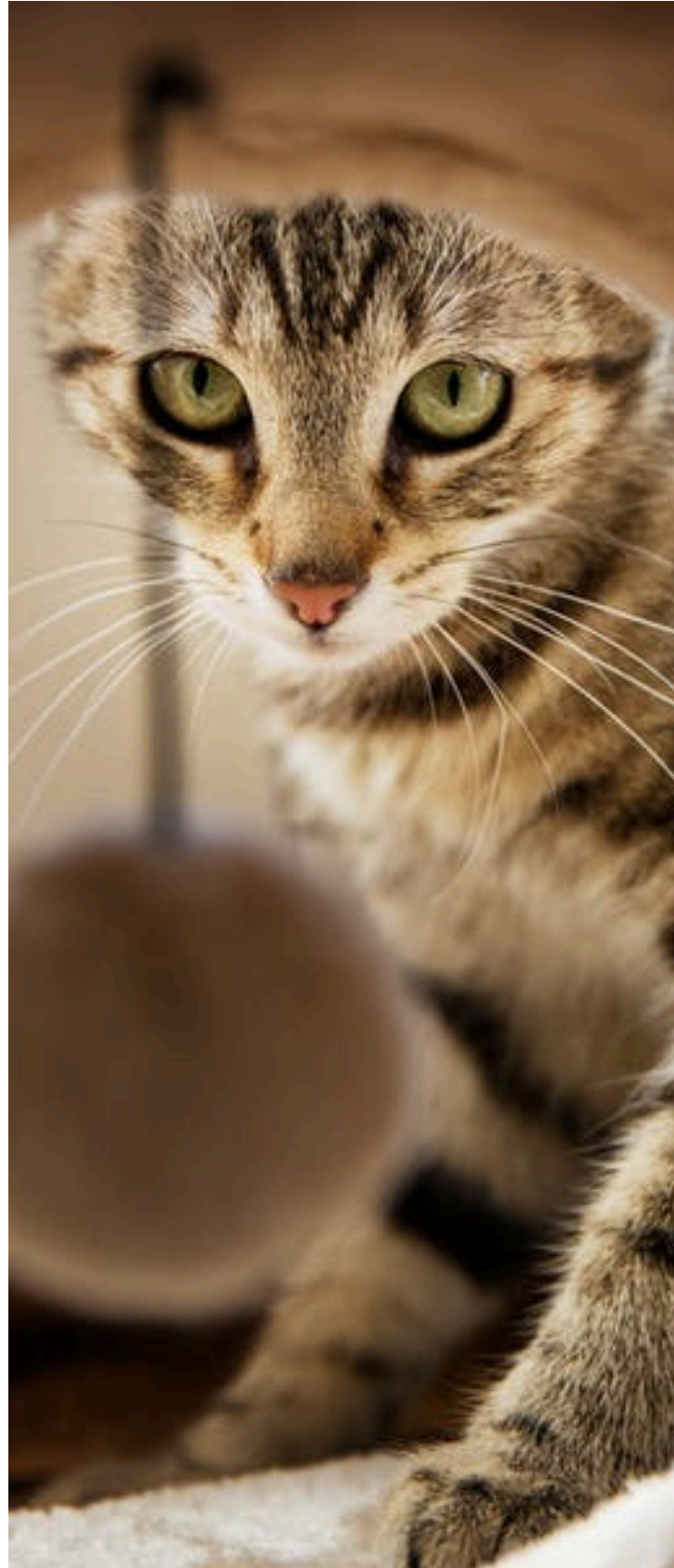
- >35 organizations adopting techniques promoted by 3RsC

3Rs and culture of care embedded in institutional culture

- >10 organizations referencing the 3Rs and CoC in formal documentation

The 3RsC as a trusted source for 3Rs Information

- >100 organizations we've helped implement the 3Rs
- 11 invited staff presentations
- >96,000 website views from >41,000 visitors (>10% increase from 2024)
- 45 institutional members



Impacts by The Numbers

Mature Impacts

Refinement linked to 3RsC

- Improved housing and handling.
- Objective indicators of improved welfare
- >100,000 mice handled with refined methods annually

Reduction linked to 3RsC

- Fewer animals used per experiment, including animals bred for that experiment, and/or more data per animal

Replacement linked to 3RsC

- Fewer animals used in the scientific pipeline
- >11,000 rodents replaced annually

Better Science linked to 3RsC

- More predictive and translatable science. More discoveries.



Thank You to Our Members!

Our organizations members are 3Rs leaders and make our impacts in 2025 possible!

Platinum: \$15,000+/\$7,500+



GOLD: \$10,000+/\$5,000+



SILVER: \$5,000+/\$2,500+



FDA

Princeton University

Thank You to Our Members!

Our organizational members are 3Rs leaders and make our impacts in 2025 possible!

BRONZE: \$1,000/\$500



University of Colorado
Anschutz Medical Campus



Thank You to Our Initiative Members!

Our initiative members provide essential monetary support and in-kind subject matter expertise to advance the 3Rs!

EHM Initiative Members: \$1000+



TDB Initiative Members: \$1000+



Thanks to all members of our Artificial Intelligence, Compassion Fatigue, 3Rs Certificate Course, Environmental Health Monitoring, & Refinement Initiatives!

Thank You to Our Members!

AI Initiative Members

abbvie



Axiom



UNIVERSITY of WASHINGTON



Thank You to Our Members!

MPS Initiative Members



Thank You to Our Individual Donors!

Our individual donors are an important part of our organization with their contribution to the 3Rs. We thank both those listed below and many more anonymous donors.

Gina Alvino
Hossein Amirabadi
Robert Barbee
Susan Bolin
Tiffany Borjeson
Angela Brice
Laura Conour
Maria Elena Contreras Figueroa
Maria Ejlertsen
Maria Alice Fusco de Souza
Subhajit Giri
Matthew Grant

Ken Henderson
Kerith Luchins
Lauren Martin
Rajneesh Pathania
Norman Peterson
Jerry Poling
Minati Singh
James Taylor
Sally Thompson-Iritani
Mary Ann Vasbinder
Erica Watson
Cheryl Woods

